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**BIOLOGY.**

A PAPER READ TO THE EVANSTON PHILOSOPHICAL SOCIETY.  
DEC. 29TH, 1874, BY N. S. DAVIS, A. M., M. D., ETC.

THE word *Biology*, was first introduced into common use by Treviranus at the commencement of the present century.

It means literally, a discourse on life; and is now very generally used to designate that branch of science relating to the origin, development and phenomena of living matter.

By some it is used as synonymous with physiology.

It would be better, however, to restrict the word to its original application, as indicating an inquiry into the origin and essential properties of matter capable of manifesting the phenomena of life.

Through all the past ages of literature and philosophy, few topics have been more fruitful in eliciting discussions, observations and experiments, developing a great variety of facts

and theories, and yet without a satisfactory adjustment of the latter to a full explanation of the former, than the one under consideration.

In a paper recently read before this Society, it was stated, substantially, that the universe consists of *matter*, *force*, and mind or spirit; the two former essentially passive, the latter alone capable of spontaneous or self-action. But strictly speaking, is there any such thing as *force*, except as a condition or property of either matter or mind? Aside from the operations of mind, can we find any proof of the existence of *force* except as a property or condition of matter? To speak of *force* as one of the distinct entities of the universe, parallel with matter and mind, but distinct from both the latter, appears to me erroneous. Neither can I conceive of such

a thing or idea as *passive force*. The ideas properly conveyed by the two words are antagonistic, and therefore not capable of correct application to the same thing at the same time.

Yet we not only meet at every turn with expressions clearly conveying the idea of *force* as a separate entity or subject of thought, but also representing it as a fixed quantity in the universe, appearing in different forms or modes of action, but never annihilated. For instance, a ton of coal is said to contain a certain amount of *force*, meaning thereby, that under certain circumstances in connection with oxygen, it would be capable of developing a certain amount of that peculiar *mode of motion* in matter termed in common language, *heat*.

As a figurative expression it would be generally understood correctly; but is it scientifically correct? Has the ton of coal in reality any force except its specific gravity and the cohesion of its atoms? That it has the capacity, when its temperature is properly elevated, to enter rapidly into combination with oxygen, and by such union, so to increase the movements in the atoms of matter as to constitute a given amount of force, is true.

But the *capacity* to develop force under certain conditions, is not itself force. As well might we say an egg is a hen, or the germinal cell of the ovum, a man. It is proper to say, that a ton of coal and a certain quantity of oxygen are capable, by their union, of developing a certain amount of force.

The *force* itself exists only while the union is taking place.

The capacity to develop the force in some other form may still remain,

because neither the oxygen nor the carbon is annihilated by their union. As the so-called cosmic forces of the material world, heat, light, electricity, attraction, etc., are simply exhibitions of material properties and modes of motion, and as no atom of matter is annihilated by simply changing its relation to other atoms, it is proper to say, that the *capacity* for evolving these forces in connection with the material universe is, in the aggregate, always the same. But while the capacity to evolve force is the same, the amount actually being evolved varies with each passing hour. My object in presenting these preliminary remarks, is to invite attention to the necessity, especially in scientific and philosophical discussions, of more exactness in our modes of expression, that we may avoid vagueness and confusion of thought, and the conveyance of imperfect or erroneous ideas. And in no field of inquiry is this caution more necessary than in that pertaining to the study of living matter. For here, more than elsewhere, the word *force* has been used in the most vague and latitudinous manner.

The ancients had their *vis vitæ*, *vis animæ*, *vis generatrix*, *vis medicatrix*, *vis conservatrix naturæ*, etc., which they used on all needful occasions to explain whatever to them was otherwise unexplainable. So also at the present time, writers assume the existence of a vital, biotic or life *force*; a neurotic or nerve force; a myotic or muscular force; a reparative or conservative force, etc., and invest these respective forces with whatever attributes or powers are necessary to serve their purposes. If we interpret the language applied to them literally, we find them not only invested with individ-

uality and intelligent action, but also with many of the qualities of matter, such as quantity and motion. For instance, it is common to hear certain articles of food and drink spoken of as capable of conversion into life force or nerve force; to hear these forces spoken of as capable of increase, accumulation and exhaustion.

Again, the *vis conservatrix* or reparative force, in medical literature especially, is invested with the most remarkable attributes. The expressions used, not only imply a separate and independent existence, but also the highest order of intelligent action; a veritable goddess enthroned in the living body and capable of acting in every direction to guard the citadel of life. It has seemed to me that the assumption of the existence of forces not capable of proof, and the investment of them with just such attributes and capabilities as our fancy might deem necessary, was not only unphilosophical, but greatly detrimental to the progress of true science. That there are specific and absolute differences that distinguish living from dead matter, is too obvious to need illustration. Both, however, require to be studied in the same manner, and with an equally careful adherence to observed facts and inductive laws. If we take up a piece of inorganic matter for investigation, we analyze it to find the kind of matter of which it is made; and we note its shape, density, and particular arrangement of its atoms, to determine the properties by which they are held together. If we pursue the same course in regard to living matter we shall arrive at results equally satisfactory. That there are certain properties peculiar to, and inherent in all

organic matter, so long as it retains the capacity to exhibit the phenomena of life, is evident from facts familiar to us all. Take for example the simplest form of organization, the germinal cell of the ovum, or the chit or germinal part of the seed. Each is destitute of all trace of either capillary vessel or nerve, yet each is susceptible to the impression of certain exterior agents or influences, and whenever these are applied, a series of regular and determinate changes commence, constituting the active phenomena of life. It requires but a moment of careful logical thought to recognize here the existence of two inherent elementary properties. One imparts to the cell or mass of bioplasm the capacity to receive impressions, and hence I have called it *susceptibility*. The other causes the atomic changes that result from the impressions received, to follow certain laws, both in the addition of new atoms and the liberation of old ones; and I have, therefore, called it *vital affinity*. *Susceptibility* and *vital affinity* are the elementary properties of all organized living matter. It is the possession of these properties that gives to the protoplasm of Mr. Huxley, and the bioplasm of Mr. Beale, all their peculiarities and capabilities of development.

It would be a waste of time to speculate as to the nature of these properties. They constitute the peculiar and elementary forces of the organic world, and can be recognized and studied only by their effects, in the same manner that we recognize and study heat, electricity, attraction, as elementary forces of the inorganic world. You suspend two inorganic substances in water, and if they unite,

forming a new material, you say the union was the result of a property in the combining bodies which you call chemical affinity. You do not see the property or force, yet for that reason you do not doubt its existence. So if we place the germinal cell of the animal or vegetable in certain relations we find its atoms uniting with other atoms of matter, and forming not a new and homogeneous compound, as in the display of chemical affinity, but a complex and progressive series of additions constituting growth or development; and we call the property in the germinal cell by which these changes are effected, *vital affinity*. These properties, susceptibility and vital affinity, are elementary and inherent in all organized living atoms of matter, whether vegetable or animal. Deprive the germ of either or both of these properties and it immediately becomes subject to the same laws that govern inorganic matter. Expose it to warmth and moisture, ever so sedulously, and instead of the phenomena of life, you have only those of disintegration and decay.

It has been claimed by some, that these properties of living matter are simply correlations of those controlling inorganic or dead matter. But they are so radically different, both in origin and modes of action, as to defeat all attempts to trace their identity with either heat, electricity, or any of the varieties of attraction. For instance, chemical affinity causes the atoms of matter to unite in certain definite proportions, and the union thus formed to remain stationary; while vital affinity, once called into activity, continues its influence over the atomic or molecular changes

through periods of time more or less definite, inducing combinations and decompositions in successive order until a certain result is reached. Again, the properties of inorganic matter are universal in their presence, being capable of detection in all forms of matter, organic and inorganic, while susceptibility and vital affinity are manifested only in matter the molecules of which have assumed a definite arrangement under the influence of some prior organic body.

In other words, there are no known circumstances under which the molecules of inorganic or of organic matter *spontaneously* unite in such a manner as to exhibit the properties of living matter. I am aware that Pouchet and others claim to have demonstrated by experiments, that some of the infusoria, as vibriones and bacteria, are capable of originating spontaneously in solutions containing organic matter from which all prior germs or spores had been excluded; but other equally careful experimenters have arrived at opposite conclusions. And it only requires a glance at the progress of the science of life during the last two centuries to be satisfied that there is no such phenomenon in nature as spontaneous generation.

In the days of Aristotle, many fishes, reptiles, worms, and all insects were thought to originate spontaneously. Hardly had this error been corrected in regard to these several species, by the discovery of their ova, when the numerous varieties of Entozoa began to attract attention as animals springing, *de novo*, from the simple aggregation of organic molecules. The appearance of maggots in meat, larva in cheese, and worms in the alimentary canal, were very

generally regarded as specimens of spontaneous generation, until the experiments of Redi, in 1668, demonstrated the facts to be otherwise. It was then thought that the axiom of Harvey, "*Omne Animal ex Ovo*," was of universal application. But only a few years later, 1675, the discovery of animalcules or infusoria in water and other fluids, by Lieuwenhoek, opened a new and extensive field for observation; and at a later period gave rise to a renewal of the discussions concerning spontaneous generation. The invention of microscopes and their application to the study of these innumerable species of minute objects in air, earth, and water, have enabled us already to trace the propagation of many of them by the evolution of ova, spores or germs, and others by segmentation and budding, leaving at the present day only a very few of the most minute living organisms undetermined in their mode of propagation. Even Pouchet claimed to find in his solutions the spontaneous appearance of only two or three varieties, namely, the vibriones, bacteria and nonads.

If it is true, however, that during the last two centuries the progress of exact or experimental science has driven the advocates of spontaneous generation from worms and insects, down to two or three of the most minute varieties of the infusoria, we are fully justified in assuming, that further progress by the same methods will rob them of even those.

The Harvenian axiom, that all animals spring from eggs, and all vegetables from seeds, is not strictly correct. For we find some of the more minute and simple organizations of both animal and vegetable nature, to

propagate their species by simple division or segmentation, instead of ova.

Without dwelling further on the modes of propagation, we simply assume the position that all organized living matter is possessed of the two properties heretofore named, susceptibility and vital affinity, and that these properties, together with the special aggregation of molecules in which they inhere, are in all instances derived from a prior living parent. Hence, both the special molecular arrangements and the specific character of the properties governing them, must be identical with those of the parent from which they were derived. And as all the molecular movements constituting nutrition, growth, and metamorphosis or disintegration in living matter, take place under the direction of these properties, it follows as a logical necessity that every bud, segment, or ovum, will follow in its development through all stages from the simple germinal cell to the most complex animal, the special type of the parent from which it was derived. If the parent was a simple aggregation of bioplasm, constituting a nonad or vibrio, with neither recognizable vessels or nerves, the propagating segment will develop into the same simple structure and nothing more.

If the parent is a vertebrate with vessels, nerves, muscles, and all the complex organs of the higher orders of animals, the germinal cell of the propagating ovum will contain molecules or atoms of bioplasm, representing each typical structure of the mature animal, and under the guidance of these elementary properties, will develop in the same order and reach



the same complex maturity. So exactly do the properties of the germ represent those of the parent, that when the latter have been materially altered by disease, the former partake of the same modification and thus transmit the disease hereditarily from one generation to another. If these propositions are true, it follows that the Darwinian idea of progressive development from a lower to a higher order of living beings, by the gradual change of one species, order, or genus of plants or animals into another, is contrary to a fundamental physiological law of living matter. That the elementary properties of which we have been speaking, are capable of being modified in their operation by the influence of exterior agencies, mental and physical, is true. But such modification is limited to simple increase or diminution of activity, or to defective supply of material, and consequently shows itself, not in a change of the type of organization, but only in the degree of perfection attained in the processes of growth.

The so-called law of the "survival of the fittest" or strongest, may apply to the individual members of each species, but cannot be extended in such a manner as to transform the "fittest" of one species into the most unfit or "weakest" of another species. There is no plainer or more persistent law recognizable in the material world, than that like begets like, through all grades of living objects. Not only does this physiological law, founded on the origin and nature of the properties controlling all the molecular changes in living matter, negative the idea of progressive development of one species into another; but the radically different anatomical plans on

which the different general divisions of the animal kingdom are based, renders the development of one into another, a physical impossibility. For instance, the more perfect the growth or development of an animal constructed on the plan of a radiate, the further will it become removed from one constructed on the plan of a mollusk, an articulate, or a vertebrate. Neither can any possible perfection in the growth of an animal constructed on the anatomical plan of an articulate, bring it into proximity to the construction of a vertebrate.

The same thing is shown in the radical differences in the modes of development in the ova or germs of each division of the animal kingdom.

If, as we have intimated, every aggregation of molecules constituting a vegetable or animal germ, capable of manifesting the phenomena of life, is derived from a living parent, and possessed of such elementary properties as will guide each successive molecular change in a direction to make the resulting plant or animal of the same type as the parent, it must be inferred that every such germ contains at least one molecule typical of each primary structure found in the mature plant or animal.

It might be thought that this would necessitate a large number of typical molecules in the germ, especially of the higher orders of animals. A closer study, however, will show that only a few really typical or elementary structures are required for the complete development of the most complex of all animals, man. All vegetables and the lowest species of animals, present but a single structure, consisting of cells variously arranged, and exhibiting no other functions than those of

assimilation or growth and elimination or excretion. As we ascend in the scale of being, we find added successively, elastic fibrous tissue, capillary vascular, nervous, and muscular tissues. Thus, all the organized living parts of the human body, are resolvable into five primary structures or forms of organization, namely, the cellular or secretory; the elastic fibrous; the capillary vascular; the muscular, and the nervous. And each of these has its own specific function or office to perform. The first imbibes from the materials in contact with it, certain substances, causes their union into new forms either for its own growth or for elimination as a secretion, or for both. The second, simply forms a tough, elastic bond of union, and support for all the other structures. The third consists of capillary tubes adapted to the movement of fluids through them, and to free exosmose and endosmose through their walls. The special office of the fourth is contraction, by which it becomes the active motor force of animal bodies. The fifth possesses the double function of receiving and transmitting impressions. Hence the germ of even the most complex animal, need contain but five typical molecules to represent all the primary structures of living matter. Each of these typical molecules being endowed with the properties, susceptibility and vital affinity, would be capable of responding to the presence of exterior matter, selecting from it the materials for its own development, and rejecting all the rest. But each must, from an

absolute law of necessity, follow its own special type. Were this not so, we would constantly find the different structures of the body mixed in inextricable confusion. And yet this necessity for following the typical law of molecular growth presents another anatomical barrier to the theory of evolution or progressive development of one species into another. Through the whole range of anatomical, physiological, and pathological investigations, I am not aware of the discovery of a single instance in which a tissue of lower type of organization has been transformed into one of a higher type. For instance, we never find elastic fibres transformed into capillary vessels; the latter into muscular fibres; or muscular fibres into nerve structure. Whatever apparent transformations of tissue have been observed, have invariably been in the opposite direction, namely, from the higher to the lower form. Having already occupied quite as much time as the Society has allotted to the essayists on these occasions, I will close by stating, that the foregoing observations relate to the elementary properties of all living matter, and to the primary function of each distinct structure, as they are manifested in the various grades of vegetable and animal bodies, and without any reference to the purely mental part of man. The latter, so far as its connection with the material organization can be traced, has its special seat in a portion of the nervous structure, through which alone its operations are made known to us.

## REMARKS UPON CATALEPSY, WITH REPORT OF A CASE.

SUBMITTED TO THE CHICAGO SOCIETY OF PHYSICIANS AND  
SURGEONS, BY J. H. HOLLISTER, M. D.

GENTLEMEN.—The affection termed Catalepsy, is one so exceedingly rare, and in many of its phenomena so interesting that I deem it hardly necessary to apologize for calling your attention to the subject, and for occupying a few moments in detailing a case which has fallen under my observation, which so far as I am able thus far to study it, *seems* one of genuine catalepsy. This opinion has the concurrence without exception, so far as I know, of a number of medical men, who have been interested in examining the patient, with me, since he entered the hospital.

Few men, even among our medical writers, seem to have much experience from personal observation; some even doubting, but that, among many cases of so-called catalepsy, they had not all been feigned, or were a peculiar manifestation of *Hysteria*. These suggestions have led me from day to day to watch the case all the more critically, lest I should be deceived as to the *facts*.

Catalepsy is indeed so rare, that even Prof. Watson, with all his extended facilities for observation, remarks, "I have never seen a case of perfect catalepsy—which I now regret, as I once had an opportunity of doing so, of which I did not avail myself,"—and in his work, cites quite at length, a case which is quite fully detailed by Prof. Gooch.

Prof. Niemeyer says, "In my description of the symptoms and course

of catalepsy as an independent disease, I must rely entirely upon the representations of others, since all the cases which I have had an opportunity of observing personally have inspired me with the suspicion that they were simulated." Prof. Dunglison in like manner, refers to its rare occurrence, and speaks of a single case in which it had occasional very brief manifestations which had fallen under his observation.

It will be my purpose in few words to give a portraiture of the characteristic symptoms of catalepsy, and with this compare the appearance and symptoms of my patient as they have been noted from day to day, and I shall ask you gentlemen to sit in judgment upon the question of its genuineness.

Blazius classes catalepsy with the neuroses of stability. During the *fit*, the limbs remain stationary in the position assumed before the attack, or in that in which the attendant has placed them, and are not susceptible of change so far as can be judged by the will of the patient. In a quiescent state, the muscles do not seem in violent contraction, in fact, slight motion is easily accomplished *but* only to a very limited extent, for the moment anything like free movement of any portion of the body is attempted, the rigidity of the muscles is very like that of a person when endeavoring voluntarily to oppose the motion you seek to make, only more *steady*,



and for almost any length of time persistent, without the tremor which invariably appears when the muscles are for a long time upon severe strain in obedience to the will.

Besides the loss of voluntary motion, there is also a suspension of both *thought* and sensibility. If not, if the consciousness and sensibility be retained, there is no power by word or sign to indicate their continuance.

There are instances of partial catalepsy, when motion and sensibility were *lost*, but consciousness was not suspended; but in cases of typical catalepsy, the patient upon recovery has had no consciousness of sensations nor position. And all these strange phenomena while the functions of organic life were either not at all or but slightly interfered with.

That sensibility is lost, seems evident in that there are not the manifestations of pain which find even involuntary expression when there is pinching, pricking, cutting or burning of the surface of the *body*. The hearing seems lost, and the pupil of the eye responds to the stimulus of light.

The duration of the attacks are often for a few moments, and are sometimes induced by what is termed animal magnetism. Sometimes they are present for a few hours, and then pass away; in cases more rare they are persistent for days.

In respect to duration of attack, the case I am now to relate exceeds any of which I find record.

With reference to the causes which produce catalepsy, a word should be said as this has a bearing upon the case before us. Unusual impressibility of the nervous system, from whatever cause, seems to be the predisposing

condition, and it is most frequently complicated with hysteria. It is the sequel of marked inebriety and of insanity. Such are the conditions in which, under the excitement in a powerful manner of the emotions, the person passes into this strangely unconscious state.

I will now proceed to detail the more obvious symptoms and conditions of my patient, reserving for a future paper such observations upon the nervous state as the limits of this article will not permit.

CASE—Michael Finnigan, a laborer, a native of Ireland, 28 years of age, 5 feet 10 inches in height, 38 inches in chest measurement, of good muscular development, but rather spare of habit, weighing about 140 pounds, with fair skin, dark hair and whiskers, and of well-developed nervous temperament, was admitted to Mercy Hospital, Nov. 4, 1874.

We glean from imperfect sources the following brief history: He had been a healthy, hard-working man. For eight years he had drank liquor to excess. During the last year he had left it off, using in place large quantities of very strong tea.

It is said that he left off work in a slaughter-house, a year ago, on account of disordered nerves.

His mother says, that at times he behaved himself very strangely, and was, as I think, in some measure insane. Some eight weeks before his admission, he became in some degree unconscious, but did not fall, recovered himself so far as to reach the house of an acquaintance, with difficulty; became more and more helpless; was remembered to have answered but a single question during that evening, and now so far as I can learn, for a

period of nearly *three months*, has been entirely speechless. The condition of the patient from day to day has been noted by my assistant, Dr. H. Gradle, to whose notes I make reference, the statements of which are verified by my own daily observation.

The patient's condition at the time of entrance was that of pretty good health, there being but little appearance of emaciation. Skin warm, moist, pliable, and frequently slightly bathed with perspiration. The temperature per rectum, 99.8. Pulse varying from 65 to 78. Heart sounds nearly natural, but rather feeble. Pulse full; soft; easily compressible. Respirations almost entirely abdominal, and 13 per minute. Mouth firmly closed, and facial muscles fixed and rigid. Eyes closed for hours; occasionally a tear coming over the face from the external canthus—a quick blow upon the nose or forehead would produce the semblance of winking. Globe of the eye mostly turned inward and upward, remaining fixed for long periods of time, the pupil *contracting* somewhat under powerful stimulation. The muscular system seems rigid in every part, save in the motion of the *eye-lids*, and these seem never under the control of volition. The muscles at first yield slightly under pressure, and then powerfully resist farther movement. With considerable force, say of twenty or twenty-five pounds pressure, the upper extremities may be flexed in any direction, in which they are susceptible of motion, and will then remain as placed for almost any period of time—even for hours; and an equal force would be required to return them to their former position. The body can be suspended in nearly a straight line

for quite a period of time, by lifting the feet and occiput. The lower extremities raised to an angle of forty-five degrees from the bed, require from eight to ten minutes to gravitate to the level again. The muscles of the mouth are only overcome with much force; and when relaxed, the mouth remains fixed and open for a time. Buccal secretions are natural. Tongue moist and natural. Mucous membranes indicate perfect aeration of the blood and normal secretions. No methods devised by heat, tickling the fauces, inhalation of vapors, currents of electricity, or stimulating or irritating applications, gave us any evidence of consciousness. Such was the state of the patient on the 4th instant, when he was brought to the hospital.

Nov. 23. The patient has now been under my care for nineteen days, and during that time, I have been able to note or learn from the interne, the following facts:

1st. *As to the motions of the body.*—Usually, once in twenty-four hours, he will turn upon his side in bed, and has twice placed his hand under his head. Slight motions of the extremities may be accomplished at will by the attendant, but any decided flexion or extension is always accomplished with difficulty. When the rigidity is overcome by *force*, the part remains as firmly fixed in the position to which it is compelled, as in that from which it was removed. If in any part there is relaxation, it is only for a moment or two, when the wonted rigidity is again assumed. This is especially true of the eyes. Twice in the nineteen days has he been known to slightly raise his head, and look

round as though he were conscious, and then again to pass into the same rigid state. When sustained alone by the head and feet, the thighs slowly *flex* upon the pelvis, and there is a facial expression indicative of pain. The body thus flexed to an angle of forty-five degrees, was laid upon a hard couch upon the floor. The head and chest began very slowly to sink to a horizontal position, and were ten minutes by count in reaching the plane, and this without twitching or tremor, or other evidence of muscular exhaustion, other than the acceleration of the pulse and respiration. Placed in an upright position and left to himself, the body obeys the laws of gravitation without any evidence of volition on the part of the patient. Sustained in an upright position, the legs gradually flex, and the body settles to the floor. When their weight is not sufficient to overcome the rigidity of the muscles—as for instance, the hands and fore-arms—they remain in a given position for an almost indefinite period.

2d. *Color of the Body.*—The patient is usually a little paler than natural, although a blush frequently comes over the surface as in health. The cutaneous capillary circulation is nearly natural; the skin soft and natural; the superficial heat about as in health.

3d. *Temperature.*—The bulb of the thermometer in the mouth, the registry averages  $98\frac{1}{2}$ ; in the rectum, 99.

4th. *Respirations.*—The general average has been from 13 to 16 per minute. When the body was *flexed* and left, head and extremities unsupported, and they were gravitating to a level, the respirations rose to 24 per minute. The respirations are nearly

absolutely abdominal, as the elevation of ribs and sternum is imperceptible.

5th. *Circulation.*—The beating of the heart is natural, but rather feebler than should be in health. Sounds all natural. Pulsations average from 65 to 78, sometimes running to 100 when being moved, and at one time to 124 when inhaling ether.

6th. *Nutrition.*—The method of feeding since his entrance to the hospital, has been by inserting an œsophagus tube; and when in position, connecting with a fountain syringe—and by this means, introducing regularly, three times each day, a sufficiency of milk, eggs, and *beef-tea*. There was no evacuation of the bowels after his entrance to the hospital for ten days, when there were free movements of solid *fæces* of natural color and appearance; and another twelve hours later, since which time, the evacuations have taken place every two days, with some evidence of tenesmus.

7th. *The Urine.*—This has been carefully drawn on different days, so as to ascertain accurately the amount secreted. When not drawn, it is usually voided from three to six times in twenty-four hours, the average amounts varying from twelve to twenty ounces. It has a healthy appearance; contains a little mucus, specific gravity of 1028, and yields neither albumen nor sugar, and is acid in reaction.

8th. *Behavior Under the Influence of Ether.*—The patient has been twice anæsthetized; the first time by Dr. Gradle, who reports a temporary and complete relaxation of the muscles, followed in a few moments by the usual rigidity.

To-day, I caused him to inhale

ether for fifteen minutes, with the following results :

At the end of that time, there was partial relaxation of the muscles—thoracic respiration was established, and full, deep inspirations, with elevation of the *ribs* and *sternum*.

The eyes opened as when one awakes from sleep, and were turned to different persons as if fully conscious. He shrank from the threatened snapping of the nose, and performed the only seeming voluntary motion which I have witnessed in the nineteen days, when he raised his hand and removed the napkin which was saturated with ether, and was laid upon his face. His head was slightly raised, and he seemed to look round the room as if *bewildered*. The surface was now flushed and warm; temperature 99 internally. Respirations increased to twenty-four per minute, and the pulse ran up to 124. Inhalation of ammonia and sulphurous acid gas, showed irritation of the nostril. As the etherization passed off, he sunk again, in all respects, into his former state.

*Effect of Electricity.*—The galvanic Faradic current was now tried, as strong as the attendant could well tolerate, with marked *effect*, in contraction of the facial muscles as it was applied over the seventh nerve; so upon the cervical region and the hand. The spinal muscles responded

to the application to the cervix and sacrum.

Experiments were continued over different regions of the body, till the fact of response of the muscles to the stimulus of electricity was fully established, but their tonicity was in no wise diminished by its application.

The pupil of the eye also readily contracted under the stimulus of electricity applied to the temples, the same as with a bright light.

Blood flowed moderately freely under the act of wet cupping, and readily coagulated, and had a healthy appearance.

Under the microscope, the disks appear well formed, and the white corpuscles have their relative percentage only.

The patient has now been in this condition about *seventy* days, and what shall be the result, time only can determine. I have thus far sketched what may be termed the gross appearances of what is clearly a case of complicated catalepsy.

Jan. 1st, 1875. P. S.—Since the above report was submitted, the patient has so far recovered the use of his muscular system as to feed himself. The consciousness of what had passed is partial, and the power of sensation becoming again apparent.

THE PREVENTION OF ZYMOTIC DISEASES.—Dr. Lyon Playfair, in his address as President of the Health Section of the British Social Science Association, says: "The isolation of patients afflicted with small-pox, scarlatina and measles, will one day become part of hygienic law, though at present it would not be supported by public opinion."

THE ORIGIN OF TRANSFUSION.—According to reliable records, transfusion was first practiced, in 1492, upon the person of Pope Innocent VIII. The operator was a Jewish physician. The experiment was tried three times. The result of the treatment was that the blood-donors, three in number, died, as well as the decrepit pontiff himself.

## Clinical Reports.

### MERCY HOSPITAL OPHTHALMIC CLINIC.

SERVICE OF PROF. S. J. JONES, M.D.

*Reported by F. J. Huse, M.D.*

I.  
**T.** R. H—; thirty-three; blacksmith's helper; healthy, and of temperate habits; while breaking off the end of a bar of iron, was forcibly struck in the left eye by a fragment weighing about two ounces. A jagged angle penetrated the cornea at its outer and lower margin, freely lacerating the iris and the capsule of the crystalline lens. Another sharp projection inflicted a wound in the sclerótica, through which a small portion of the pigmental layer of the choroid may be easily distinguished, owing to the gaping produced by the increased interocular tension.

Four days subsequently he makes his appearance, complaining of very severe supraorbital pain, great tenderness of the eye, and complete obstruction of vision, consequent upon traumatic cataract. The eyelids are ecchymosed, the conjunctiva is highly injected, and there is a bright red zone around the margin of the cornea. At the point of the corneal wound, there is an irregular conical bulging over a line in height and two lines in diameter, through the truncated apex of which there is hernia of the iris. The anterior chamber is very nearly filled with portions of the opaque lenticular substance, and the capsule is adherent to the upper and

inner margin of the iris for a space nearly three lines in length.

There is ordered to be dropped into the eye, once daily, a solution of atropia (sulphate), five grains to the ounce of distilled water, for the purpose of dilating the pupil as widely as possible away from contact with the lens, and diminishing the ciliary disturbance. In addition, the patient is directed to use a collyrium containing two grains of zinc sulphate to the ounce of distilled water, and to make frequent applications to the lids, of thin pieces of muslin wet with cold water; at the same time, his bowels are to be kept freely open.

Oct. 14th.—There has been a subsidence of the pain, and under the influence of the atropia, the pupil has become irregularly dilated. Notwithstanding an improvement in the iritis, the capsule of the lens remains adherent to the posterior surface of the iris; the flakes of lenticular substance are being slowly absorbed, the hernia of the iris is lessened, but the eye is still inflamed and sensitive.

Oct. 21st.—An improvement has taken place in the general condition of the eye; and absorption of the opaque lenticular matter is occurring, especially in the outer portion of the pupil, so that the patient can now count fingers at the distance of three feet.



Dec. 1st.—Only a very small amount of lens matter remains in the anterior chamber, and the border of the iris has been gradually detached from the capsule of the lens, so that its outline is now perfectly natural, except at the point where hernia occurred. The hernial projection has been slowly diminished, until it is scarcely perceptible. A portion of the lens still occupies the posterior chamber, but vision is growing much clearer, and the process of absorption will continue until the removal of the entire lens shall have been effected; thus the injury which produces cataract, also affords the means of its removal. The admission of the aqueous humor, at first rendering the contents of the capsule opaque, promotes its final dissolution.

## II.

S. R. M.—; has severe pain, and considerable tinnitus in the right ear, from which she has been suffering since her exposure eight days ago, to a severe storm. Removing the numerous wrappings about her head which have been assisting the inflammatory process by keeping the parts hot and promoting decomposition of the discharge, the patient presents an example of those cases in which inflammation of the meatus is aggravated by the nature of the dressing. The entire auricle, which has been repeatedly smeared with goose oil and common salt, is much inflamed and excoriated. The meatus, which has been kept plugged with cotton saturated with the same compound, is narrowed concentrically throughout its entire extent; the tissues are œdematous and exceedingly tender; and the

surface almost entirely stripped of its epidermis, looks red and roughened. After cleansing the meatus by syringing, the membrana tympani is found to be greatly thickened and hyperæmic. There is copious discharge. Upon catheterization, the eustachian tube is found to be moderately pervious. There is no inflammation of the fauces.

It is ordered that the parts be kept cleansed by repeated syringing with warm water; that the superfluous coverings be dispensed with; and that the meatus be filled twice daily with the following solution, slightly warmed:

R.—Zinci sulph.,	grs. v.
Acidi carbol., (cryst.),	grs. ii.
Glycerinæ,	f 3 ij.
Aquæ destill.,	f 3 ij.—M.

Leeches are to be applied to the tragus and meatus, if the pain and inflammation continue.

## III.

J. D. E.—; twenty-seven; blacksmith; was struck in the left eye while engaged in driving a rivet by a small piece of iron, which pierced the cornea, passed through the pupil, and penetrated the crystalline lens. Severe inflammation and traumatic cataract have followed, and now five days after the injury was received, he presents himself for treatment.

Anæsthetizing the patient with chloroform, the lens is extracted by the modified operation of von Graefe; but careful search fails to reveal the presence within it of the foreign body. To obviate the risk of sympathetic inflammation of the other eye, enucleation is performed; and in the posterior portion of the vitreous humor, is found the particle of iron.

## Translations.

### PROGRESS OF MEDICAL SCIENCE IN GERMANY.

BY EDMUND J. DOERING, M.D.

- I. TREATMENT OF SCABIES, BY DR. CLEMENS (*Allg. Med. Central Zeitung*, No. 98). II. TREATMENT OF EPIDIDYMITIS, BY DR. CALVO (*Allg. Wiener Med. Z.* No. 49). III. TREATMENT OF WHOOPING-COUGH, BY DR. MASCAREL (*Med. Chir. Rundschau*, IV B., I Heft).

#### I.

DR. CLEMENS, on the basis of repeated and careful experiments, considers the following prescription for Scabies as not only more convenient for general use than the numerous remedies now employed, but also as more efficacious:

℞ Acid Arseniosi,	gr. j.
Potass. Carbonate,	gr. xv.
Spirit Sapon.	f ℥ ss.
Aqu. Font.	f ℥ iij.—M.

The carbonate of potassa is added to increase the solubility of the arsenious acid, and also to prevent the too rapid drying of the lotion when applied to the skin. One-tenth part of this mixture is a sufficient quantity for each application, and the patient is directed to rub it well into the skin, at least twice daily. This lotion is quite harmless, for the quantity of arsenic absorbed by the skin is too minute to justify any fears of poisoning, the author having used it even for young children without producing any ill effects, not even derangement of the digestive organs.

#### II.

This frequent complication of Gonorrhœa is best treated on the following plan: First, apply from ten to

twenty leeches to the perineum along the affected side, covering the testicles constantly with warm poultices, to which twenty drops of laudanum may be added. Absolute rest in bed, and abstinence from all stimulating food must be strictly enjoined. Oatmeal gruel forms the best drink for this class of cases. Every other morning the patient is directed to drink two glasses of seidlitz-water. At a later stage of this affection, frictions of the testicles are to be made thrice daily with the following salve:

℞ Ext. Bellad.	3 iss.
Ung. Hydr.	℥ j.—M.

If hydrocele has developed, causing severe pain, small punctures into the tunica vaginalis with a sharp lancet will be of use. After the inflammation has subsided, and only a swelling of the testicles remains, frictions with the following ointment will be found to be very useful:

℞ Ext. Bellad.	3 iss.
Potass.-iodidi,	3 j.
Adipis.	℥ j.—M.

The scrotum must be wrapped in cotton and be constantly supported by a suspensory bag. If the swelling persists and seems to depend on the condition of the general constitution,

then gentian with iodine, cod-liver oil, quinine, salt-baths, etc., will be indicated. Emissions of bloody semen becoming permanent, point to an inflammation of the vesiculæ seminales, and therefore demand a separate treatment of these organs.

### III.

Dr. M. recommends the following treatment for Whooping-cough :

1. Every morning between five and eight o'clock, the patient receives from a teaspoonful to a tablespoonful, according to age, of a solution of tartar emetic (1 gr. to 4 oz. water). Sensitive children receive ipecac instead.

2. After supper, one-sixth of grain of extract of belladonna is given, in-

creasing the dose gradually to one grain. After the paroxysms diminish in frequency, the dose of the belladonna may be diminished correspondingly. The extract must be pure and produce the characteristic erythema and dryness of the throat. If the general nutrition of the little patient suffers from too frequent vomiting, small doses of morphine may be given every three or four hours, combined with the administration of five or six teaspoonfuls of black coffee after breakfast.

The author has followed this plan of treatment for 18 years, and has invariably diminished the duration of the disease to four and three weeks and even less.

## GLEANINGS FROM THE FRENCH.

*Translated by Fred. J. Huse, M.D.*

**I**N a note to the editor of *La France Medicale*, Prof. Bouchut calls attention to the use of the ophthalmoscope as a valuable means of diagnosis in traumatic injuries of the brain.

In simple concussion of the brain, the ophthalmoscope fails to indicate the existence of any lesion of either the optic papilla or the retina and retinal vessels. The condition of the fundus is nearly normal.

In contusion, however, followed by encephalitis, and in compression of the brain, the appearance of the fundus affords a measure of the effect produced within the cranium. The papilla of the optic nerve is red, swollen, of a flattened appearance, and more or less obscure and diffuse on account of the hyperæmia of the nerve. It is sometimes the seat of an

œdema which extends throughout the neighboring portion of the retina, and gives rise to an acute neuro-retinitis.

In addition, the retinal veins enlarged, flexuous, and sometimes filled with thromboses, thus indicating the difficulty with which the blood re-enters the cranium from the fundus; or an effusion obstructing the progress of the blood in the sinuses of the dura mater.

**ACCORDING** to Dr. Thorowgood, the true active principle of arnica is trimethylamine, which though only slightly soluble in alcohol, is readily extracted by water. An additional fact in favor of an aqueous solution is its failure to extract an irritant oil, which is usually present in the alcoholic solution.

## Editorial Department.

### SOCIAL ORGANIZATION AND CO-OPERATION AS A MEANS OF ADVANCING MEDICAL SCIENCE.

THERE are probably but few reading and thinking men in the profession who have not been impressed with the fact, that through all the past, much time and labor have been substantially lost or wasted either in repeating experiments and observations already fully made by others, or in prosecuting inquiries so imperfectly planned and partially executed, as to render the results of very little value.

Our literature is full of facts, observations, and the results of experiments relating to almost every department of medical science, which, from their isolated character or incompleteness, are quite as likely to be made the basis of erroneous conclusions as otherwise.

Very much of this might be obviated, and the scientific interests of the profession much more rapidly advanced, if our social organizations could be rendered more complete, and more intimately united with each other. Many of the most important questions in the department of etiology and public hygiene, can only be answered reliably by a careful comparison of facts observed at many different localities simultaneously, and in accordance with a uniform plan. If members of the profession could be more generally induced to become members of the local, state, and national associations, and all these more perfectly brought into co-operation

by uniform representation from the more local in the more general organizations, it would enable measures and plans of investigation of the highest importance to be adopted and carried out on such a scale of magnitude and uniformity, as to ensure the most reliable results.

The present national, state, and local medical societies, already present the form of organization needed; but the state and local societies need multiplying and greatly increasing their membership, thereby including and interesting a larger proportion of the active practitioners in all parts of the country.

This work is steadily progressing—and at the last meeting of the American Medical Association, the work of planning special courses of investigation was fairly begun, both in the section on practical medicine and materia medica, and in that on public hygiene and state medicine. We hope to see this followed closely at the next meeting, and every successive year, until at each meeting of all our state societies, as well as of the American Medical Association, the time shall be mainly occupied in receiving, digesting, and recording the results of well planned original or primary investigations; and the adoption of new plans for the future, instead of listening to long papers or reports compiled mostly from the current periodical literature. One of the results of a movement made

in the section on practical medicine at Detroit is, a proposition before Congress to add to the records of the Signal Service Bureau, the electrical and ozonic conditions of the atmosphere, and to permit the records of

that bureau to be used in aid of sanitary science. If the proposition receives the sanction of Congress, it will open the way for a most important advance in our knowledge of the causes of all zymotic diseases.

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## Society Reports.

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### TRANSACTIONS OF THE CHICAGO SOCIETY OF PHYSICIANS AND SURGEONS.

REGULAR MEETING, DECEMBER 28, 1874.

*Reported by R. E. Starkweather, M.D.*

THE society met as usual in the Grand Pacific Hotel, the President in the chair. The minutes of the preceding meeting were read and approved.

Dr. W. C. Lyman proposed the name of Dr. O. C. De Wolff, (Howard Medical School) for membership.

Dr. J. H. Etheridge then reported a case of dysmenorrhœa, relieved by topical applications of the Faradic current from a Kidder's battery.

Dr. F. H. Davis reported a case of relapsing fever. The patient, with the exception of some gastric disturbance, seemed to have fairly entered upon convalescence when a relapse occurred. Quinia had been freely administered. The speaker inquired whether other cases had occurred in the practice of those present, and also whether there were cases of the relapsing fever known in Europe.

Dr. Bartlett reported a similar case in which the patient relapsed every Thursday for ten weeks, in spite of

large doses of quinia. When blue mass was combined with the latter, some improvement occurred, but large doses were necessary. The patient was finally removed from his residence, when it was discovered that there was an overflow from the main sewer of the house. After the removal, recovery was complete and rapid. He had no doubt, that relapsing fever occurred in this country.

Dr. Davis explained that his patient lived in an upper story of the house, and that the wife of the latter was threatened with a similar disease.

Dr. Henrotin reported a case of emansio mensium from vaginal contraction, relieved by surgical interference. The amount of grumous blood discharged was very unusual.

Dr. A. R. Jackson reported several cases of subinvolution of the uterus, treated in the Woman's Hospital of Illinois, by the application of fuming nitric acid. He dwelt upon the normal and abnormal process, when sub-



involution existed. Comparing the relative dimensions of the organ in its contracted and enlarged conditions, he explained the method employed by him in making these applications, which were painless when no sound tissue was invaded. The effect produced, was the stimulation of the womb to a point where contraction was induced. Ergot had been coincidentally administered by the mouth. Prompt and permanent cures were effected.

The Secretary made some remarks upon cases of contagious impetigo recently treated by him. He alluded to the fact, that no parasites had been found to occasion the disease, either in New York or Vienna; and announced that Dr. Tilbury Fox had recently limited to this disease, the once generic term, "Impetigo." After a brief description of the disease as it occurred in adults and children, he compared the observations of Dr. R. W. Taylor, of New York, with those of other dermatologists.

Dr. Jackson reported a case of sigmoid-shaped enlargement of the sterno-cleido-mastoid in a child.

On motion of Dr. M. W. Wood, U. S. A., the following preamble and resolutions were adopted:

"WHEREAS, Dr. Jno. Bartlett did, on the 10th of November, 1873, read

to this society, a paper giving a 'description of a marsh plant from the Mississippi River ague bottoms, with a consideration of its genetic relations to malarial diseases;' and

"Whereas, This paper has since been published as one of the productions of this society; and

"Whereas, The theories advanced in this paper, have not since received, so far as known to us, either confirmation or refutation; and

"Whereas, It is desirable in the interests of medical science, that a matter of such importance be given a careful investigation; therefore, be it

"Resolved, That a committee of at least five members of this society be chosen—of whom two, at least, shall be microscopists—with instructions to wait upon Dr. Bartlett, and carefully investigate such evidence as he may have to offer, bearing upon the theories advanced by him; and to report in writing, at their earliest convenience, the result of this investigation."

The following committee was then chosen to act in accordance with the terms of the resolution:

Drs. H. A. Johnson, J. W. Freer, Walter Hay, Lester Curtis, and J. H. Etheridge.

The society then adjourned.

THE NEW YORK MEDICAL RECORD.—After January 1st, *The Medical (N. Y.) Record* will consist of sixteen pages, weekly, of text, and will form an annual volume of 832 royal octavo pages; being nearly one-third larger than before. The subscription price will be raised to \$5 a year, and the publishers will prepay the postage to all subscribers.—*American Medical Weekly*.

MERCURIAL OINTMENT IN BOILS AND CARBUNCLES.—Dr. T. Roth lauds, in the *Deutsche Klinik*, the local application of gray ointment in boils and carbuncles, especially the early stages. He anoints the affected part with the ointment four times daily, and thereby reduces the inflammation and "backens" the boil most satisfactorily.—*Phil. Med. and Surg. Rep.*

## Gleanings from Our Exchanges.

### REPORT ON OTOTOLOGY.

BY SAMUEL J. JONES, M.D., PROFESSOR OF OPHTHALMOLOGY AND OTOTOLOGY  
IN THE CHICAGO MEDICAL COLLEGE.

*From Transactions of Illinois State Medical Society.*

IN presenting to the Society a Report for another year, on Otology, it has seemed desirable to devote a portion of it to the ear, in health, before proceeding to consider its diseases. The physician is often asked, by the laity, what care is necessary for the ear in health. In general terms, the proper answer is, none. The ear, like the other organs of the body, is so organized that, in health, it will take care of itself. When any one of its functions are so performed as to attract special attention, it is fair to assume that some abnormal condition exists, which renders it advisable that careful examination of the organ be made. The detection of the presence of an accumulation of cerumen in the external meatus, is a frequent source of chagrin to patients, who conclude at once that its existence argues a want of proper personal cleanliness. Such is not, however, necessarily the case. When the ear-wax is secreted in its normal condition, the ordinary movements of the jaws work it to the outer portion of the meatus, when the use of the towel in the bath will remove it. When its removal in this way fails to occur, examination will frequently reveal an unusually dry condition of the skin within the meatus. This dryness, in a large proportion of the cases, seems to be attributable to chronic non-suppurative inflammation of the ear. The wax secreted under these circumstances seems to be deficient in moisture, and, when it accumulates there will be found mixed with it, desquamated skin from the

meatus—sometimes in quite large flakes; at other times, numerous small particles, and hairs that have been cast off with the epidermis. Having once begun thus to gather, the accumulation continues to increase; an additional portion of the watery part of the wax evaporates, leaving the mass harder. Gradually the meatus almost fills, and when illuminated there is a shining surface reflected, that has been mistaken, by those inexperienced in examining the ear, for the shining surface of the membrane of the drum of the ear. From this it may, however, readily be distinguished, by the fact that in the healthy membrane of the drum the reflected light shows itself in the form of a "triangular light spot," (which is absent when the membrane is opaque,) whereas the reflection from a mass of cerumen is an evenly-shining surface. To the experienced eye inspection will readily detect its existence, and various symptoms—usual consequences—of its presence, would suggest examination, such as impaired hearing—imaginary noises in the ear—sometimes dizziness, and unsteadiness of gait in walking, etc. When its existence has been discovered its removal may be most readily effected by syringing the meatus with some alkaline solution—alkalies being the most effectual solvent of the wax. Whatever fluids are injected into the meatus, their temperature should be very nearly that of the blood, to prevent either dizziness or inflammation resulting. Often this mass of wax is firmly adherent to the small hairs in

the meatus which have not been cast off, and should an attempt be made to remove the mass by force, such violence may cause diffuse or circumscribed inflammation of the meatus. When this removal shall have been effected, inspection shows the unhealthy condition of the meatus. If the condition be one of dryness simply—such as occurs very frequently as an accompaniment of chronic catarrhal inflammation of the middle ear—lubricating the meatus with a solution of bi-borate of soda, with a small amount of glycerine and some carbolic acid added, is generally sufficient to save the patient much annoyance, and prevent a recurrence of the trouble until the removal of the primary cause affords entire relief.

The removal of foreign bodies from the meatus is often best effected by syringing—having first ascertained by inspection that such foreign body is present. If the foreign substance be an insect it can often be dislodged simply by filling the meatus with water, and thus cutting off its respiration; and in this way violence to the ear may be avoided. A word of caution regarding the use of an instrument designated an "aurilave," which is now being extensively vended, may not be amiss. Its construction is such that the piece of sponge that is attached to the end of the stick, when introduced into the meatus, forces the contents of the meatus before it, causing an impaction of the wax, epidermis, and loose hairs, in the inferior portion of the meatus, and often against the membrane of the drum of the ear.

The injudicious use of the nasal douche, is also an occasional source of injury to the healthy ear, producing acute inflammation of the middle ear, and perforation of the drum membrane. When being used the top of the column of fluid in the reservoir should be but a few inches above the nose.

Further observation seems to indicate very conclusively, that the ear, in health, possesses considerable power of accommodation, which fact may

be taken advantage of to develop the power of hearing by systematic exercise, where any impairment exists.

Often the first departure from the condition of health, in the ears, which persons detect, is impairment of hearing, and of this they are accustomed to speak as a disease, instead of a consequence of disease. They often ask if their "deafness" is not hereditary, and state that certain other members of their family were sufferers from impaired hearing. Hereditary deafness, if possible, is certainly not of frequent occurrence, which fact, if more generally understood, would save much needless apprehension.

It is important that the distinction should be made between cases of impairment of hearing resulting from some defect in the conducting apparatus of the ear, and those in which the perceptive apparatus is at fault. Prognosis and treatment will both be materially influenced thereby.

In previous reports to the Society, allusion has been made to the gratifying diminution in the number of cases classed as nervous deafness. Recently attention has been more drawn to cases of total, or almost total deafness, following cerebro-spinal meningitis, and another form of affection of the labyrinth called Maniere's disease.

Professor Voltolini, of Breslau, has described what he calls "otitis labyrinthica," which occurs chiefly in children, and resembles in many respects the consequences which we have been accustomed to consider as cerebro-spinal meningitis.

It is a noticeable fact that the cases of deafness following cerebro-spinal meningitis seem to occur chiefly, if not exclusively, among quite young persons, and certain characteristics which he ascribes to otitis labyrinthica, should lead us to examine more closely our cases of supposed cerebro-spinal meningitis. In these cases the general practitioner has opened to him a large field of usefulness. The aural surgeon usually sees these cases only after all change has occurred, and loss of hearing has resulted, and an effort is being made for its resto-

ration. More careful observation is needed in the beginning, and during the progress of the disease, and further, *post-mortem* examination of the labyrinth in fatal ones, to understand these mysterious cases. One of the embarrassing consequences of these diseases of the labyrinth, is the persistent tinnitus aurium. This ringing occurs under various circumstances and from various causes, so that treatment must, in each case, depend upon the cause which produces it. In some cases, where it was supposed to depend upon abnormal tension of the tensor tympani muscle, division of that muscle through the membrana tympani is said to have given relief.

The marked depression of spirits which occurs in persons who suffer from affections of the ear is a noticeable feature of these affections. It is most strikingly shown in those cases of persistent tinnitus, and in several recorded cases this is shown to have been the cause of suicide.

Your Committee would invite especial attention to acute inflammation of the mastoid cells, which is occasionally mistaken for erysipelas. The peculiar redness of the skin over the mastoid process, in these cases, is not unlike the appearance of erysipelas in its early stage. It is an error which occurs like that in acute inflammation of the lachrymal sac, and sometimes leads to disastrous consequences. It is sometimes mistaken for circumscribed, or even diffused, inflammation of the external meatus, which should not occur if the parts be at all carefully inspected. If the disease be recognized in its early stage the application of a few leeches over the mastoid process will generally prove sufficient to check its progress. If, however, the case be only seen at a later stage, when pus has formed, the sooner puncture is made and the pus evacuated the greater will be the safety to the patient. An anxious expression of countenance, in addition to the excessive pain accompanying this, characterizes it. Where discharge exists as a consequence of this inflammation, and escapes, either

through a spontaneous or artificial opening, its removal should be hastened by thorough syringing with some astringent solution, as in the treatment of a discharge from the meatus. Regarding such discharge from the external meatus—so-called otorrhœa—there is a popular error that it is dangerous to check it lest metastasis to the brain occur. For fear that some such result might follow the checking of the discharge, it is allowed to continue for years, at the imminent risk to the life of the patient. That discharge is but a consequence of some pathological condition—usually the result of some acute or chronic inflammation—which should be discovered and removed, when the consequence will disappear with the removal of its cause. In every instance, without exception, where such discharge from the ear exists, an effort should at once be made to remove its cause. If there be perforation of the membrane of the drum of the ear accompanying it, on the disappearance of the discharge a decided tendency to closure of the opening in the membrane of the drum will manifest itself—contrary to the generally received opinion on that point. Where the edges of the opening are in apposition, or approximate it, the opening heals readily; if the opening be circular, or the edges wide apart, it may become necessary to cauterize them and start a granulating surface to fill the opening; but the tendency to repair is much greater than is generally supposed.

In diagnosis the contributions for the last year have probably been less than in some other departments of otology. A fact worthy of note is that, when the Eustachian tubes are inflated, either by the Valsalvian or Politzer's methods, or by the Eustachian catheter, and there is an improvement immediately in the patient's hearing, the difficulty lies, at least in part, in the Eustachian tubes. Where, however, the tubes are opened, the membrane of the drum is nearly normally clear, and no improvement in the hearing occurs on such inflation;

the obstruction usually lies in some other portion of the conducting apparatus, or possibly in the perceptive apparatus, and the prognosis is more grave. For the purpose either of inflating the Eustachian tubes or of applying any medicament to the Eustachian tubes or middle ear, the pure silver catheter will be found the one most generally useful, as it can readily be bent at once to suit the variations of the nostrils of different patients, or of the two nostrils of the same patient. If properly adjusted it can be introduced without pain or danger to the patient, and it may safely be said that there is no substitute for it in the treatment of diseases of the ear.

Since the report of last year there

has appeared a "Treatise on Diseases of the Ear," by Professor Roosa, of New York, which has no equal in the English language. It is a work useful alike to the aural surgeon and the general practitioner. A more limited work, entitled "Lectures on Diseases and Injuries of the Ear," by Mr. W. B. Dalby, of London, is also a valuable contribution, and embraces many of the more recently accepted ideas in aural surgery.

Numerous monographs on the various departments of otology have been written, which are valuable contributions to the literature of otology, and show the increasing interest now felt in this field, so much neglected in former years.

#### NITRITE OF AMYL AND BELLADONNA IN DYSMENORRHEA.

NEW YORK MEDICAL JOURNAL AND LIBRARY ASSOCIATION,  
STATED MEETING, NOV. 27, 1874.

THE paper for the evening was read by Dr. Mary Putnam Jacobi, upon "Nitrite of Amyl and Belladonna in Dysmenorrhœa."

The clinical history of three cases was given to illustrate the method of operation of the above remedies. All three were cases of severe spasmodic dysmenorrhœa. They were treated by administering belladonna for several days previous to the recurrence of menstruation, and nitrite of amyl by inhalation during the paroxysm. This treatment, it was believed, had a rational basis.

The argument in its support was founded upon the data furnished in the second case, in which were manifest three sets of phenomena:

- (1.) Vomiting, pallor of skin, cold hands and feet.
- (2.) Extraordinary peristaltic action of the intestines.
- (3.) Spasmodic pain in the uterus.

All these point toward one element—namely, that of spasmodic contraction of blood-vessels.

First, the so-called sympathy between the uterus and the stomach, and between the stomach and brain, were fully considered in their dependence and interdependence with reference to the symptom, *vomiting*.

It was believed, reasoning from the experiments of Schiff and others, that the vomiting of pregnancy, vomiting of sea-sickness, and many cases analogous in character, was due to the same cause, namely, anæmia of the brain, producing spasmodic contraction of blood-vessels at its base.

It was farther argued that anæmia of the intestines produces contractions or increased peristalsis, due to spasmodic contraction of blood-vessels.

There are three conditions in which a hollow muscular organ can contract in the state of vacuity:



(1.) After direct irritation of its nerves.

(2.) After direct irritation of its muscular fibre.

(3.) After changes in its circulation.

A detailed account of six experiments was given. The experiments had been performed upon rabbits. The abdominal cavity was opened, the intestines drawn out and carefully protected in a bag of oil-silk, which was kept immersed in a vessel of warm water; the uterus exposed, and the abdominal aorta exposed. The aorta was then compressed with a ligature, and the result carefully noted.

Several waves of peristalsis ran down the rectum, but never in a contrary direction. Contraction of the uterus occurred, and was distinctly visible at the middle third of the organ. Upon removal of the ligature the contractions ceased. The time at which contractions appeared after compression of the aorta was made, also the duration of the contraction after compression had been removed, were carefully noted. The conclusion made from the experiments was, that tonic contractions of the uterus may be excited by occlusion of the aorta, and that such contractions continue from one to four minutes after compression has been removed. Clonic contractions also occurred, after the type of contractions of masses of smooth muscular fibre.

What bearing do the results of these experiments have upon the treatment of spasmodic dysmenorrhœa?

The pain in these cases is dependent upon tonic and clonic contraction of the uterus.

These, in turn, are dependent upon some cause. Of the conditions in which a hollow muscular organ can contract in a state of vacuity, direct irritation of muscular fibre and direct irritation of nerves were excluded. Consequently we are obliged to fall back upon changes in the circulation of the uterine walls. If the change of the blood-vessels passes to an irri-

tation, spasmodic contraction must take place, and uterine contractions will be determined by local anæmia.

Spasmodic contraction of blood-vessels resulting from irritation of vaso-motor nerves, is the cause of the pain of spasmodic dysmenorrhœa. It is upon these considerations that the remedies suggested are used. The *secondary* effect of belladonna is dilatation of the blood-vessels.

Belladonna is to be administered, therefore, previous to the occurrence of menstruation, for the reason that it is desirable to obtain the *secondary* effects of the remedy.

Nitrite of amyl is used for the purpose of relaxing blood-vessels. This is in accordance with the admitted physiological action of the remedy.

This method of treatment, of course, is more especially adapted to cases of spasmodic dysmenorrhœa; but it has been found, both in the experience of the author of the paper, and in that of others, that great relief may be afforded even in those cases in which the dysmenorrhœa depended upon displacements, constriction of the cervix, etc.

The method is, to administer belladonna in ordinary doses for several days previous to the occurrence of the menstrual flow, and when pain comes, to administer by inhalation from two to six drops of the nitrite of amyl, *p. r. n.* In one case a single drop of amyl was all that was required.

Dr. Sell remarked that he had been in the habit of administering nitrite of amyl by the mouth, and had obtained just as good results as he had obtained when the remedy had been inhaled. He prescribed it in one-drop doses, combined with drachm doses of peppermint water, and repeated every half hour. In one case of dysmenorrhœa, and one only, he had used the nitrite of amyl, and in that case the patient was completely relieved of pain.

Drs. Pallen and Peaslee did not feel prepared to discuss the paper.—*N. Y. Medical Record.*

"UPON THE RESEARCHES OF CURRY, AND THE RECENT VIEWS WITH REGARD TO THE REMEDIAL USE OF WATER."—The researches of Curry were made at the close of the last and the beginning of the present century.

It appeared from the reading of the paper, that Curry resorted to the use of water extensively in the treatment of a great variety of diseases. Not only were his observations made with regard to the effect of cold, but also of warm water. The results of his experience were extensively quoted, and the conclusion was easily drawn, that the water treatment of to-day is essentially a revival of a practice adopted three-fourths of a century ago. It was an interesting fact, also, that Curry appreciated and clearly set forth the importance of the thermometer, and indeed the present axillary and self-registering thermometer were anticipated by him. The quotations from Curry, although so old, sounded like the fresh observations of a master-mind upon this subject—so fully were they in keeping with the most recent views concerning the value of this remedial agent.

Prof. Flint's method of using the Cold Pack is as follows:

Wrap the body in a sheet wet in cold water, and then sprinkle with a watering-pot, and continue the pack from ten minutes to half an hour, according to the temperature and condition of the pulse. Used in this manner, he is of the opinion that we obtain all the benefits of the *bath*.

Special reference was made to the internal use of water in the treatment of disease. The quantity to be taken in the treatment of fever should be regulated by the feelings of the patient. Air, food, and drink: these form the tripod whence emanate the laws which should govern the hygienic management of our cases of fever. The internal use of water was suggested in the treatment of renal affections. A case was related in which the urine was scanty, albuminous, and of very low specific gravity, accompanied by other symptoms of grave character, but was brought to a successful ter-

mination by water treatment, originated and executed by Dr. Perry, formerly house physician at Bellevue Hospital. The chief feature of the treatment was the administration of four ounces of water, or milk and water every half hour, regularly and steadily persisted in.—Dr. Austin Flint, in paper read before N. Y. Academy of Medicine.—*N. Y. Med. Record*.

#### ERGOTIN IN CROUPOUS PNEUMONIA.

—Dr. Wycisk, acting on the principle that this drug contracts the vessels, and so prevents exudation from them, has treated six cases of croupous pneumonia in this way, and gives the following report: In one such case, marked by an excessive highly albuminous expectoration, it ceased entirely two hours after the administration of the drug in powders of nine grains each every quarter of an hour. The abundant rales in both lungs soon diminished, so that there was only a slight crepitation at the original focus of the disease. These good effects lasted for two days. Two relapses occurred, however, but the same good effect was again obtained by the administration of the ergot. After the second relapse, ten drop doses of the tincture of ergot were given four times daily, until convalescence was fully established. In the five other cases the ergot was used early, and none ended fatally; none became chronic; and none left appreciable deposits behind them; in all of them the exudation was decidedly checked by the ergot. It is, however, held to be a dangerous remedy when the lungs are considerably infiltrated, where there is emphysema, where the cerebral arteries are weak, and where the patients are feeble or decrepid.—*Allg. Med. Central Ztg.*, 88, 1874.—*N. Y. Med. Record*.

DR. E. WARREN SAWYER, a graduate of the Harvard Medical School, has obtained the position of Lecturer on Obstetrics at the Rush Medical College, after a competitive examination with thirteen others.—*N. Y. Med. Record*.

**MEDICAL GRADUATES.**—The Medical Colleges of the United States graduated in the year 1874, three thousand students. — *N. Y. Medical Record.*

**PUERPERAL FEVER IN THE NEW MATERNITY AT BONN.**—In a letter to *The Lancet* Nov. 28, 1874, a correspondent writes, concerning the new Gynæcological Institute at Bonn:

"It is a singular fact that puerperal fever broke out immediately after the opening of the hospital, and six patients died from it, while since that time there has not been a single case of the disease." — *N. Y. Med. Record.*

**A CANINE SURGEON.**—An interesting instance of sagacity has been recorded by a correspondent of the *Philadelphia Medical Times*. A large dog of the St. Bernard and Newfoundland breed, called "Carlo," had been brought up with a cat, and the two became great friends. The cat had the misfortune to swallow a needle and thread which had got mixed up with some minced-meat prepared for its food. The cat suffered intensely. The dog, after some apparent deliberation, fixed upon a spot in the cat's neck, and commenced to lick it, which operation it continued to perform very assiduously for the better part of two days, his feline friend aiding him by keeping its head on one side. All at once the dog got much excited, and was seen to be anxiously striving to catch something between its teeth. The animal succeeded at last, by a sudden jerk, in seizing the point of the needle, and drawing it through the skin and fur; but it still hung by the thread, which was divided by the daughter of the dog's master. The dog subsequently, after greeting the return of its master's son, immediately went to the place where the needle and thread had been thrown. Dr. Benjamin Lee, who relates the circumstance, says that he has been at the pains to verify the facts, and to do himself the pleasure of shaking "Carlo's" paw, and giving him the salutation of a *confrère*. — *London Lancet.*

**THE BRITISH MEDICAL ASSOCIATION** will meet in Edinburgh next year. Preparations have been begun, and "lively and pleasant expectations" of the visit are already indulged in.

**A CURE FOR BRIGHT'S DISEASE.**—Dr. Hegswald says, a half pint thrice daily, of a fresh infusion of the leaves of *Asplenium Scolopendrium*, L., is a most successful treatment in Bright's disease. This is the harts-tongue or spleenwort, and is said to be popular in Devonshire and elsewhere, for its medicinal virtues. — *Phil. Med. and Surg. Rep.*

**DANGER FROM EXCAVATIONS.**—It is well known that the exposure of large quantities of fresh earth, as attends railroad and canal construction, develops intermittent and typho-malarial fevers. To lessen this, Dr. Stephen Smith, of New York City, offers the wise recommendation that sewers be laid only after November 15th, and before June 1st; and last Tuesday week the Board of Health, accordingly, resolved that the Commissioner of Public Works be requested to omit all excavations between June 15th, and October 1st, and that no subsoil be exposed during that time. — *Phil. Med. and Surg. Rep.*

**TUBERCULOSIS NOT INOCULABLE.**—In a late communication to the Academy of Sciences of Paris, M. Metzquer tried to upset Villemin's doctrine. For the last five years the author has made experiments (from seventy to eighty) under the direction of Prof. Feltz, of the Faculty of Nancy. He never succeeded in inducing pulmonary consumption in the inoculated animals. The results were capillary embolism, infarctus, vesicular pneumonia, &c., all of which lesions have (the author maintains) been confounded with tubercle. Tuberculosis may, however, be generated in animals (says M. Metzquer), without inoculation of tubercular matter, by rough treatment, bad food, and, strange to say, by inflicting a wound upon them. — *London Lancet.*

**SUPPRESSION OF URINE FOR TWENTY-FIVE DAYS.**—Dr. A. W. Fontaine (*Virginia Medical Monthly*) reports a case in which the above phenomenon took place. Patient was a lady, aged twenty-one, nervo-sanguine temperament. The urinary suppression took place during an attack of intermittent fever. Diuretics one and all failed utterly to restore the action of the kidneys. Cupping, blisters and galvanism were alike futile. On the twenty-fourth day an injection into the bladder was made with twenty drops tinct. cantharides in a half pint of warm water. The next day a little urine was seen, which, under the same treatment, gradually increased to normal amount. Other cases carefully observed, are noted, in which suppression of urine continued respectively eleven days, sixteen weeks, twenty-two weeks, fifteen months, and lastly, a youth, seventeen years old, who never made water in his life, and was perfectly vigorous and active.—*Detroit Medical Journal*.

**LETZERICH ON LOCAL AND GENERAL DIPHTHERIA.**—Letzerich has recently published his views on this subject, which have special interest, as he is one of the boldest defenders of the parasitic theory of diphtheria, and has contributed some very important data for the support of his views. He states his belief as follows: Local diphtheria is a contagious disease of the mucous membrane. The *contagium* consists of a fungous vegetation which goes through its development and growth in the diphtheritic exudation, and in the tissue of the mucous membrane if there is no exudation. Should these low organisms force their way into the circulation, they spread and increase in the body, and work a general infection; i. e., general diphtheria.

These low organisms which he classes as bacteria, plasma spheres and micrococci, etc., induce various changes both primarily in the local foci of the disease; and secondarily, in such organs as the kidneys, spleen, liver and heart. First come disturb-

ances in the nutrition of the tissues themselves, from the occurrence of fungous emboli; these interfere with the circulation, and then an astonishing increase in the fungi takes place. With the increase of the micrococci is *pari passu*, a destruction of the cellular elements, so that the cells of the kidneys, liver, and spleen, may disappear, as well as the contractile substance of the cardiac muscle.—*Virchow's Archiv.*, 4, 1874.—*N. Y. Med. Record*.

**MR. ERICHSEN ON AMERICAN SURGERY.**—On November 9th, Mr. Erichsen delivered an address in London, on his impressions of American surgery during his late tour in this country. It is in general favorable, as may be judged from the following extract:—

Surgery in the United States certainly stands at a very high level of excellence. The hospital surgeons throughout the country have struck me as being alike practical, progressive, and learned in a very high degree. In practical skill, and aptitude for mechanical appliances of all kinds, they are certainly excelled by no class of practitioners in any country. They are thoroughly up to modern surgery in its most progressive forms, and I have never met with any class of men who are so well read and so perfectly acquainted with all that is done in their profession outside their own country. It would be a great injustice to American surgeons for it to be supposed that surgical skill is confined to the large cities, or to the few. On the contrary, I know no country in which, so far as it is possible to judge from the contemporary medical literature, there is so widely diffused a high standard of operative skill, as in the country districts and more remote provinces of the United States. The bent of the mind of the American surgeon is, like ours, practical rather than scientific; in fact, there are the same mental characteristics displayed in him that we find here; the same self-reliance,

the same practical aptitude, the same *curative* instinct, which leads him to consider his patient rather as a human being to be rescued from the effects of disease or injury, than as a

scientific object to be studied for the advance of professional knowledge. How, indeed, can it be otherwise than that there should be such a resemblance?—*Phil. Med and Surg. Rep.*

## Book Reviews.

**CONTRIBUTIONS TO THE ANNALS OF MEDICAL PROGRESS, AND MEDICAL EDUCATION, IN THE UNITED STATES, BEFORE AND DURING THE WAR OF INDEPENDENCE.** By Joseph M. Toner, M. D., Washington. Government Printing Office, 1874.

This is a volume of 118 pages, published by the Commissioner of Education, under the sanction of the Secretary of the Interior.

Although made up largely of short biographical sketches of the members of the medical profession, who practiced in the American colonies, prior to and during the War of Independence, yet it contains in addition a very valuable amount of information concerning the colonial legislation on medical subjects, and the state of medical education during that part of our history.

Indeed, it is a very valuable contribution to the history of the medical profession in America, and affords another illustration of the persevering industry and literary research of its distinguished author.

**ON PRISON DISCIPLINE AND PENAL LEGISLATION, WITH SPECIAL REFERENCE TO THE STATE OF TENNESSEE.** By J. Berrien Lindsly, M. D., D. D.

This is a pamphlet of 64 pages, printed in Nashville, and from the pen of one of the most gifted writers in our country. Although written

with special reference to the treatment of criminals and the course of Penal Legislation in Tennessee, yet it contains an array of historical facts, both in regard to the general progress of penal legislation throughout the civilized world, and the local progress in this country, which renders it of much value to all who feel an interest in the progress of humanity.

**ON ANCHYLOSIS.** By Lewis A. Sayre, M. D., Prof. of Orthopaedic and Clinical Surgery, in Bellevue Hospital Medical College, New York. New York: D. Appleton & Co., 551 Broadway, 1874.

This is a neatly printed pamphlet of 20 pages, containing a paper on the general subject of Anchylosis, read to the New York Academy of Medicine, by Dr. Sayre, and originally published in the Transactions of the Academy, for October, 1874.

It may be read by all with interest and profit.

**THE RELATIONS OF MEDICAL SOCIETIES TO PROGRESS IN SCIENCE.** Inaugural Address of the President of the Medical Society of the County of Kings, New York, by Alex. J. C. Skene, M. D., June 16, 1874. Brooklyn.

This is a pamphlet of 27 pages, devoted to a discussion of the three following propositions: "There are three avenues through which progress must come:



- "1. Through the Medical Schools.
- "2. Through Legislation by the People.
- "3. Through the Profession, as Individuals and in Societies." While we could not agree with all the sentiments expressed by the author, we think his address may be read with interest.

TRANSACTIONS OF THE TWENTY-FOURTH ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY, held in the City of Chicago, May 19, 20 and 21, 1874. Chicago: Fergus Printing Company, 244-248 Illinois Street. 1874.

This is a volume of 248 pages, printed in good style. It contains a full record of the proceedings of the last annual meeting of the Illinois State Medical Society, including the papers read and the discussions relating to the same, together with the list of officers and members. As a whole, the volume is highly creditable to the Society, and to the officers under whose direction it was issued; and yet it is marred by certain important defects, that certainly should be guarded against in the future.

It is the second year of the experiment of employing a professional reporter, to furnish full reports of all verbal or extempore remarks by officers and members during the annual meetings. While the result has shown that such reports, if properly revised while passing through the press, add very much to the interest and value of the transactions, it has equally shown, that without such revision, every member who speaks is liable to have, either his thoughts so jumbled by the reporter that he can hardly recognize them as his own, or his words spelled wrong, or both. When matter is hurried through the press for a

daily newspaper; there may be excuse for neglecting revision, and careful proof reading; but when four or five months are occupied in putting a work of 200 or 300 pages through the press, there can be no reasonable excuse for making *mite* read "might;" expectant, "expectorant;" simple continued fever, "self-continued;" alimentary canal, "abdominal canal," etc.; or to send out to the world such unmitigated nonsense as the following:

"We should aim to adapt the *nutritive* capacity of the patient to it, (the food) in such shape as to require the least change, particularly if the tongue and alimentary canal are coated. Why? Because something foreign has got there that must be got out. It is because there is a derangement of the *efficiency* of the secreting cells of the mucous membrane, so that they fail to secrete the normal amount of *lubricating material*."

The time was amply sufficient to have given every member whose remarks were reported, an opportunity to have revised, or at least read the proof sheets, of the matter attributed to him; and in future, the Society must require this to be done, or else follow the example of the American Medical Association, and employ no one as reporter, who is not also an educated physician: for abundant experience has shown, that no stenographer, however skillful, can report medical lectures or discussions correctly, unless he has also a good knowledge of medical science. We make these remarks, not from any disposition to find fault with the committee of publication, but from a sense of duty, and with the hope of securing better results in the future. N. S. D.

AT a meeting of the students of the Chicago Medical College, January 7th, the following resolutions were unanimously passed :

• WHEREAS, Recent severe sickness has rendered it necessary for our highly esteemed Professor of Organic Chemistry and Toxicology, WALTER S. HAINES, to seek temporarily, a milder climate; therefore

*Resolved*, That we, the students of the Chicago Medical College, deeply regret even the temporary loss of instruction from so skillful a teacher, and so kind a friend;

*Resolved*, That we hereby tender to him our sincere thanks for his recent masterly instruction, and zealous attention to our interests; and offer him our heartfelt sympathy and cordial hope for his speedy recovery and return to his post of honor and usefulness;

*Resolved*, That a copy of these resolutions be presented to the Professor, and also a copy to the CHICAGO MEDICAL EXAMINER, for publication.

(Signed) M. WARE,  
F. R. WEBB, } Com.  
J. R. KEWLEY, }

THE ILLINOIS CHARITABLE EYE AND EAR INFIRMARY.—This institution now occupies its new building, corner of Adams and Peoria streets. The accommodations for the comfort and treatment of patients, it is believed, are not surpassed by those of any similar institution in the country. The upper stories are sub-divided into a large number of single sleeping rooms, instead of extensive wards; while the lower stories are provided with ample sitting-rooms, dining-hall,

dispensary and clinic rooms. The building is heated with steam and provided with excellent means of ventilation. The edifice, 105 ft. long, by 47 ft. wide, consisting of a basement and four stories, with mansard roof, is an ornament to the portion of the city in which it is situated.

From the seventeenth annual report, we learn that 1,012 patients were treated gratuitously during the past year, making an aggregate of 10,620 that have received the benefits of this charity since its foundation in 1858. Regular clinical lectures on the diagnosis and treatment of diseases of the eye and ear, are given at the Infirmary during the winter as also the spring terms of our medical colleges. These lectures are open to medical students and practitioners from any portion of the country.

Patients are admitted for treatment, who bring certificates (signed by some respectable physician or county supervisor) either that they are absolutely unable to pay for their board or treatment, or that they can pay for their board alone.

The dispensary is open from 2 to 3 o'clock p. m., for out patients.

The following are the officers of the Infirmary: Trustees—E. W. Blatchford, President; B. W. Raymond, V. President; D. Goodwin, Jr., Secretary; H. W. King, J. T. Ryerson. Treasurer—E. B. McCagg. Consulting Surgeons—Prof. J. W. Freer; Prof. H. A. Johnson; Prof. E. Powell. Attending Ophthalmic Surgeons—E. L. Holmes, M. D.; F. C. Hotz, M. D. Attending Aural Surgeon—S. J. Jones, M. D. Microscopist—I. N. Danforth, M. D. Superintendent—G. Davenport. Matron—Mrs. Davenport.